# VPDES PERMIT FACT SHEET

This document gives pertinent information concerning the reissuance of the VPDES permit listed below. This permit is being processed as a major, Industrial permit. The effluent limitations contained in this permit will maintain the Water Quality Standards of 9 VAC 25-260 et seq. The discharges result from the generation of electricity (station capacity of 1750 megawatts) using steam produced by the combustion of coal and other fossil fuels. This permit action proposes to establish effluent limitations and monitoring and reporting requirements on the discharges from the station. A reduced Total Suspended Solids limit is proposed for Outfall 004, Outfalls 006-011 have been removed, Total Phosphorus limitations on Outfalls 001-003 have been removed, and DO monitoring requirements for Outfalls 004 and 005 have been removed in this permit reissuance. Special conditions are updated to reflect current agency policy and site activities.

1. Facility Name and Address: Dominion Chesterfield Power Station
5000 Dominion Boulevard
Glen Allen, Virginia 23060

   Location: 500 Coxendale Road
Chester, Virginia 23831
See **Attachment 1** for location and site maps.

2. SIC Code: 4911 – Electric Services

3. Permit No. VA0004146 Existing Permit Expiration Date: December 9, 2009

4. Owner: Virginia Electric and Power Company
   Owner Contact: Cathy C. Taylor
Director, Environmental Support
Telephone: 804/273-2929
E-mail: Cathy.C.Taylor@dom.com

   Facility Contact: Kenneth Roller
Senior Environmental Specialist
Telephone Number: 804/273-3494
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5. Application Complete Date: The initial application was complete on June 2, 2009. Additional material was submitted to supplement the application on July 8, 2009 and October 8, 2009.

   Permit Drafted By: Emilee Adamson, Piedmont Regional Office
Date: August 30, 2012 (initial draft)

| | | |
|---|---|---|
| Reviewed By: | Ray Jenkins | Date: October 5, 2012 |
| | Curtis J. Linderman | Date: February 4 & 12, 2013 |
| | Kyle Winter | Date: February 25, 2013 |

   Public Comment Period Dates: From: To:

6. Receiving Stream:

| OUTFALLS | 001 | 002 | 003 | 004 | 005 | 104 |
|---|---|---|---|---|---|---|
| **Receiving Stream** | James River, Main Channel | James River, Main Channel | James River (Farrar Gut) | James River (Farrar Gut) | James River (Farrar Gut) | Internal Discharge to OF 004 |
| **Lat/Lon** | N 37º 22' 58" W 77º 22' 51" | N 37º 22' 58" W 77º 22' 48" | N 37º 22' 19" W 77º 23' 4" | N 37º 22' 18" W 77º 22' 54" | N 37º 22' 20" W 77º 21' 50" | N 37º 22' 35" W 77º 23' 04" |
| **Basin** | James River (Lower) | James River (Lower) | James River (Lower) | James River (Lower) | James River (Lower) | James River (Lower) |
| **Subbasin** | NA | NA | NA | NA | NA | NA |
| **Section** | 1 | 1 | 1 | 1 | 1 | NA |
| **Class** | II | II | II | II | II | NA |
| **Special Standards** | bb | bb | bb | bb | bb | NA |
| **River Mile** | 2-JMS097.70 | 2-JMS097.70 | 2-JMC003.77 | 2-JMC003.75 | 2-JMC000.37 | N/A |
| **Low Flow 1Q10 (MGD)*** | TIDAL | TIDAL | 0 | 511 | 511 | N/A |
| **Low Flow 7Q10 (MGD)*** | TIDAL | TIDAL | 0 | 511 | 511 | N/A |
| **Low Flow 30Q10 (MGD)*** | TIDAL | TIDAL | 0 | 511 | 511 | N/A |
| **Low Flow 30Q5 (MGD)*** | TIDAL | TIDAL | 0 | 511 | 511 | N/A |
| **High Flow 1Q10 (MGD)*** | TIDAL | TIDAL | 0 | 511 | 511 | N/A |
| **High Flow 7Q10 (MGD)*** | TIDAL | TIDAL | 0 | 511 | 511 | N/A |
| **High Flow 30Q10 (MGD)*** | TIDAL | TIDAL | 0 | 511 | 511 | N/A |
| **HM (MGD)*** | TIDAL | TIDAL | 0 | 511 | 511 | N/A |
| **Tidal** | Yes | Yes | Yes | Yes | Yes | Yes |
| **303(d) list**** | Category 5A | Category 5A | Category 5A | Category 5A | Category 5A | Category 5A |

*The James River is tidally influenced at the discharge points. Flow frequencies cannot be determined for tidal waters; therefore, the tidal default dilution ratios are used to evaluate outfalls 001 and 002. Farrar Gut is also tidal; however, the gut is dominated by the discharge from the power station's Outfall 003. The 10$^{th}$ percentile of effluent flow from Outfall 003 is therefore used as the ambient flow for the analysis of Outfall 004 and 005. Outfall 003 discharges at the head of Farrar Gut, so Outfall 003 is treated as if discharging to a free-flowing intermittent stream.

** Category 5A means that a Water Quality Standard is not attained. The water is impaired or threatened for one or more designated uses by a pollutant(s) and requires a TMDL (303(d) list).

7. Operator License Requirements: The Virginia Department of Professional and Occupational Regulation requires licensed operators for wastewater works. A wastewater works using advanced treatment methods, including chemical precipitation and coagulation having a design hydraulic capacity greater than 0.5 MGD but equal to or less than 5.0 MGD requires a Class II licensed operator (18VAC160-20-130.C & 9VAC25-31-200.C). Based on the metals pond and the FGD WWTP, a Class II operator is required for this facility.

8 Reliability Class: Reliability is a measurement of the ability of a component or system to perform its designated function without failure or interruption of service. The reliability classification is based on the water quality and public health consequences of a component or system failure. The permittee is required to maintain Class II for sewage pumping facilities to the County sewerage system.

9. Permit Characterization:

| | |
|---|---|
| ( ) Issuance | (X) Existing Discharges |
| (X) Reissuance | ( ) Proposed Discharge |
| ( ) Revoke & Reissue | (X) Effluent Limited |
| ( ) Owner Modification | (X) Water Quality Limited |
| ( ) Board Modification | (X) WET Limit |
| ( ) Change of Ownership/Name | ( ) Interim Limits in Permit |
| Effective Date: | ( ) Interim Limits in Other Document (attached) |
| ( ) Municipal | ( ) Compliance Schedule Required |
| SIC Code(s): | ( ) Site Specific WQ Criteria |
| (X) Industrial | (X) Variance to WQ Standards |
| SIC Code(s): 4911 | ( ) Water Effects Ratio |
| ( ) POTW | (X) Discharge to 303(d) Listed Segment |
| ( ) PVOTW | (X) Toxics Management Program Required |
| (X) Private | ( ) Toxics Reduction Evaluation |
| ( ) Federal | ( ) Pretreatment Program Required |
| ( ) State | ( ) Storm Water Management Plan |
| ( ) Publicly-Owned Industrial | ( ) Possible Interstate Effect |

10. Wastewater Flow and Treatment

This facility produces electricity using steam produced by the combustion of coal (primary fuel for Units 3, 4, 5, and 6), natural gas (primary fuel for Units 7 and 8), or distillate fuel oil (auxiliary fuel for all units). The station capacity is rated at 1750 megawatts.

See **Attachment 2** for a schematic of wastewater flows and treatment.

Wastewater Summary:

| Outfall Number | Wastewater Source | Treatment | Flow, MGD *(maximum of 30-day averages)* |
|---|---|---|---|
| 001 | Cooling Water from Units 7 and 8 | Dechlorination | 212 |
| 002 | Cooling Water from Unit 3 | Dechlorination | 89 |
| 003 | Cooling Water from Units 4, 5, and 6 | Dechlorination | 757 |
| 004 | Discharge from old ash pond – receives ash sluice water and wastewater from sumps throughout the station (low volume wastes, non-chemical cleaning wastes, screen backwash associated with reuse of Proctor's Creek WWTP effluent, wastewater from the station's car wash (non-chemical), storm water from the Unit 6 FGD runoff collection system, coal pile runoff, Water Treatment Plant wastewater, a portion of Drainage Area 4 and various other onsite tank containment areas including the station's light oil storage tank. Outfall 004 also receives the treated discharge from the metals treatment pond and the treated discharge from the FGD WWTF. | Settling, skimming. Some of the sources to the old ash pond receive treatment prior to discharge to the ash pond. There is also occasional chemical coagulation and pH adjustment as needed. See **Attachment 2**. | 15.3 |
| 104 | Metal cleaning wastewater | Lime addition, mixing, and chemical precipitation | 3.23 |
| 005 | Storm water runoff from coal ash pond closure and recovery wells/toe drains. | Settling, skimming | 4.83 *(average of 30 day maximums)* |

11. Sewage Sludge Use or Disposal: No sewage sludge is generated on site. Sanitary wastewater is discharged into Chesterfield County's sewerage system.

12. Material Storage:
No. 2 fuel oil is stored in an 11.256 million gallon tank which has a steel containment wall. Used oil is stored in a 5,000 gallon tank, also with dike. Diesel fuel is stored in a 12,300 gallon tank at the coal yard for equipment use. Drainage from these areas eventually reaches the old ash pond (Outfall 004). Water treatment chemicals are stored in their shipping containers in an area that drains to the master sump, which discharges to the old ash pond. Sodium hypochlorite is used for chlorination of the cooling water system and sodium bisulfite is used for dechlorination. All runoff from the coal yard discharges to the Old Ash Pond. A list of all chemicals used on site is included in **Attachment 2**.

13. Ambient Water Quality Information: See **Attachment 3** for ambient monitoring data at Buoy 157 and a location map. This information was used in pollutant analyses for all outfalls as representative of pH and for Outfall 001 and 002 as representative of all ambient conditions. Buoy 157 is located in the James River approximately 4 miles

upstream of Farrar Gut. The data from this station represent background ambient conditions before interaction with the heated effluent from the facility.

14. Antidegradation Review and Comments:
The State Water Control Board's Water Quality Standards includes an antidegradation policy (9 VAC 25-260-30). All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect those uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The receiving stream is determined to be a Tier 1 waterbody. That determination is based on the existence of the Richmond-Crater 208 Plan, which allocates BOD and ammonia to multiple dischargers in the segment for the purpose of maintaining dissolved oxygen concentrations at or above the level of the standard. This river segment is also on the 303(d) impaired waters list. See **Attachment 3**.

15. Site Inspection: September 26, 2008 by Heather Horne
March 10, 2010 by Meredith Williams
Site Visit: December 16, 2009 by Ray Jenkins and Emilee Adamson
See **Attachment 11.**

16. Effluent Screening: See **Attachment 4**, which includes DMR data and effluent data reported in the 2009 application.

17. Effluent Limitation Development:

| Parameter | Limitation | Basis for Limitation |
|---|---|---|
| **Outfall 001** | | |
| Flow | Monitoring only | Not applicable (NA) |
| Total Residual Chlorine | 26 µg/L monthly average<br>38 µg/L daily maximum | Water Quality Standards |
| Temperature | Monitoring only | NA |
| Heat Rejected | 11.3 x $10^8$ BTU/Hour | Water Quality Standards (i.e. 316.a variance) |
| **Outfall 002** | | |
| Flow | Monitoring only | NA |
| Total Residual Chlorine | 26 µg/L monthly average<br>38 µg/L daily maximum | Water Quality Standards |
| Temperature | Monitoring only | NA |
| Heat Rejected | 6.52 x $10^8$ BTU/Hour | Water Quality Standards (i.e. 316.a variance) |

| Parameter | Limitation | Basis for Limitation |
|---|---|---|
| **Outfall 003** | | |
| Flow | Monitoring only | NA |
| Total Residual Chlorine | 11 µg/L monthly average<br>16 µg/L daily maximum | Water Quality Standards |
| Temperature | Monitoring only | NA |
| Heat Rejected | 5.55 x $10^9$ BTU/Hour | Water Quality Standards (i.e. 316.a variance) |
| **Outfall 004** | | |
| Flow | Monitoring only | NA |
| pH | 6.0 daily minimum<br>9.0 daily maximum | Water Quality Standards |
| Total Suspended Solids | 30 mg/L monthly average<br>50 mg/L daily maximum | Federal Guidelines – BPT |
| Dissolved Oxygen | Monitoring only | BEJ |
| Total Phosphorus | 2.0 mg/L monthly average | State Policy for Nutrient Enriched Waters & antibacksliding |
| Ammonia, as N | 8.73 mg/L monthly average<br>12.8 mg/L daily maximum | WQ-based limitation |
| Total Organic Carbon | 110 mg/L daily maximum | Best Engineering Judgment (BEJ) – taken from previous bulk oil guidance to address releases of oily water to ash pond |
| Total Petroleum Hydrocarbons | Monitoring only | BEJ – see explanation for TOC |
| Oil and Grease | 15 mg/L monthly average<br>20 mg/L daily maximum | Federal Guidelines – BPT* |
| WET Limitation | 50 $TU_C$ | Reasonable potential analysis of WET data. |
| **Outfall 104** | | |
| Flow | Monitoring only | NA |
| pH | Monitoring only | Internal discharge to Old Ash Pond (Outfall 004). pH limited on discharge from ash pond. |
| Total Suspended Solids | 30 mg/L monthly average<br>100 mg/L daily maximum | Federal Guidelines – BPT |
| Total Recoverable Copper | 1.0 mg/L monthly average and daily maximum | Federal Guidelines – BPT/BAT |
| Total Recoverable Iron | 1.0 mg/L monthly average and daily maximum | Federal Guidelines – BPT/BAT |

| Parameter | Limitation | Basis for Limitation |
|---|---|---|
| Oil and Grease | 15 mg/L monthly average<br>20 mg/L daily maximum | Federal Guidelines – BPT |
| **Outfall 005** | | |
| Flow | Monitoring only | NA |
| pH | 6.0 daily minimum<br>9.0 daily maximum | Water Quality Standards |
| Total Suspended Solids | 30 mg/L monthly average<br>100 mg/L daily maximum | Federal Guidelines – BPT |
| Dissolved Oxygen | NL | BEJ |
| Total Phosphorus | 2.0 mg/L monthly average | State Policy for Nutrient Enriched Waters & antibacksliding. |
| Oil and Grease | 15 mg/L monthly average<br>20 mg/L daily maximum | Federal Guidelines – BPT |

* Acronyms from Federal Effluent Guidelines: BPT – Best Practical Treatment.
BAT – Best Available Treatment

The Federal Effluent Guidelines (FEGs) for Steam Electric Power Generating New Sources were established in 1982. Chesterfield Power Station was put in operation in 1945. Units 3 through 6 were put in service in 1952 (Unit 3), 1960 (Unit 4), 1964 (Unit 5) and 1969 (Unit 6); consequently, these units are not subject to New Source Performance Standards. Units 7 and 8 were put in service in 1990 and 1992, respectively. Because these units were put in service after 1982, the isolated discharge from these units, noncontact cooling water to Outfall 001 is subject to NSPS.

Reasonable Potential Evaluations to determine the need for Water Quality Based (WQ-based) effluent limitations are included in **Attachment 5.a. through 5.c.** Documentation of nutrient and ammonia evaluations is also included in **Attachment 5.d. and e.**

NOTE: Neither limitations nor monitoring requirements for pH are included on Outfalls 001, 002, and 003, which are non-contact, once-through cooling water outfalls. The Federal Effluent Guidelines for Steam Electric Power and Water Division Guidance Memorandum 95-012, “pH Limits in the VPDES Permits for Cooling Water Outfalls”, do not impose pH limitations on non-contact, once-through cooling water discharges. No reasonable potential exists for the pH of the cooling water or the receiving stream to be changed even in the event of equipment failure. In addition, the permittee has no control over the pH of the intake water and no reasonable remedy is available to the permittee if the intake water fails to meet the applicable water quality standards.

**Outfalls 001-003**
TRC: Outfalls 001 through 003 are assigned TRC limitations based on the Water Quality reasonable potential analyses in Attachment 5.a. and b. These Outfalls are also subject to FEG (40CFR 423.13(b)(1)) BAT Effluent Limitations of 0.20 mg/L. The WQ-based effluent limitations are assigned because they are more stringent than the FEG technology based limitations.

Heat Rejected: The Heat Rejected limitation is supported by the 316(a) variance approved with the 2004 permit reissuance. A limitation is appropriate to ensure that heat rejection does not exceed the values in the 316(a) study. See **Attachment 7** for additional discussion.

**Outfall 004:**
WET Limitation: The WET limitation is carried forward from the 2004 permit per the discussion in **Attachment 9**.

Ammonia: The proposed ammonia limitation is a water quality based limitation generated by forcing the limit in STATS.exe. See **Attachment 5.**c.

TPH and TOC: The limitation for TOC and monitoring for TPH are assigned to Outfall 004 based on BEJ to address potentially oily wastewater directed to Outfall 004 through the master sump. Storm water from oil storage containments is directed to the master sump and ultimately Outfall 004. The limitation and monitoring were originally based on the Bulk Oil Facility Guidance Memo 97-2002. Although the guidance suggests a limitation for TPH of 30 mg/L monthly average, O&G was already limited at this outfall at 15 mg/L monthly average. Consequently, the O&G limitation was protective of TPH. The Petroleum Contamination General Permit adopted December 4, 2007 contains a maximum daily TPH limitation of 15 mg/L for discharges contaminated by petroleum products other than gasoline. The fact sheet for this GP further states that while O&G has historically been the parameter used for potential sources of petroleum hydrocarbons, DEQ recently "determined that the O&G analytical method is better suited for detection of animal and vegetable fats rather than petroleum." Therefore, TPH is used in the GP in lieu of O&G. However, in this permit, the O&G limitation is based on the FEG (40 CFR 423.12(b)(3)), so the limited parameter cannot be substituted while maintaining compliance with federal law. A review of the DMR data indicates that, like O&G, TPH is consistently reported as less than quantifiable, demonstrating no reasonable need for a TPH effluent limit at this time. In order to continue accurately monitoring petroleum in the effluent, TPH monitoring is carried forward in this reissuance; however, daily maximum reporting is required in lieu of monthly average to be consistent with the Petroleum GP guidance.

**Outfalls 004 and 005:**
In the reissuance of this permit DEQ has considered our obligations under the CWA to use Best Professional Judgment (BPJ) for Best Available Technology (BAT) limitations for other pollutants not addressed under the existing federal effluent limitation guidelines (ELGs) for steam electric power plants.

EPA reserved effluent limitations for flue gas desulfurization (FGD) waters in the 1982 regulation for steam electric power plants. In 2010, EPA provided guidance on "NPDES Permitting of Wastewater Discharges from Flue Gas Desulfurization and Coal Combustion Residual Impoundments at Steam Electric Power Plants" from James Hanlon, EPA Office of Wastewater Management (June 7, 2010). This guidance provides information on how to establish technology based effluent limitations for FGD wastewater. DEQ has reviewed this guidance and believes it is inappropriate to establish BPJ for BAT at this time, since EPA is scheduled under a Consent Decree (Defenders of Wildlife vs. EPA) to develop a proposed rulemaking by April 2013 with a final rulemaking by May 2014 that will address the steam electric power plant discharges including FGD. Furthermore, if DEQ analysis of BPJ BAT requires additional treatment, the VPDES permit will need to allow a schedule of compliance for design and construction of new treatment technology. Under this scenario the power plant would be implementing the VPDES schedule of compliance to meet the DEQ case by case BPJ BAT limitations and then possibly needing to change technologies to meet the final federal effluent guidelines.

The 2010 guidance also provides information to consider when evaluating the need to establish water quality based effluent limitations for coal combustion residual (CCR) impoundments. All priority pollutants have been analyzed for reasonable potential (using the conservative assumptions of EPA's guidance: Technical Support Document for Water Quality Based Toxics Control, 1991) of exceeding water quality criteria and all applicable water quality based limits are imposed. To address narrative standards, the permit also includes whole effluent toxicity limits. Seepage discharge from the impoundments to the receiving stream is addressed through the ground water monitoring and corrective action discussed in Part 20.g of the Fact Sheet.

TSS and O&G: These limitations for Outfalls 004 and 005 are based on the technology limitations from the FEGs (40CFR Part 423.12.(b)(3), (4) and (5)) for low volume waste and fly ash and bottom ash transport water. Outfall 004 also receives coal pile runoff, which makes up 1.1 MGD of the 10.1 MGD average flow reported in Form 2C of the application. The FEG-BPT effluent limitation for coal pile runoff is a daily maximum TSS concentration of 50 mg/L (40CFR423.12.(b)(9)). The FEGs (40CFR 423.13(b)(10)) provide an exception to the 50 mg/L technology standard for "untreated overflow from facilities designed, constructed, and operated to treat the volume of coal pile runoff associated with a 10 year, 24 hour rainfall event..." This exception does not apply to the Old Ash Pond, because the effluent received settling treatment. Because the 50 mg/L limit is more stringent than the 100 mg/L limit from the other applicable sections (40CFR Part 423.12.(b)(3) & (4)), the maximum daily limitation is reduced to 50 mg/L. A compliance schedule is not appropriate as the Federal Regulations required compliance no later than July 1, 1977 (40CFR401.12(b)). Furthermore, the DMR data summary indicates that the facility is already in compliance with the reduced limitation. See **Attachment 5.f.** for the highlighted applicable sections.

pH: The limitation is based on the WQS for Class III receiving streams (9 VAC 25-260-50). The limitation is also consistent with the Industrial Storm Water General Permit, Sector O coal pile runoff pH limitations.

Dissolved Oxygen: Monitoring for this parameter was initially introduced in the 1991 permit. The DMR data summary in **Attachment 4** does not indicate any violations of the Class III dissolved oxygen criterion (9 VAC 25-260-50) of 5.0 mg/L daily average. However, monitoring is beneficial to demonstrate that the discharges continue to maintain the criteria. Consequently, the monitoring is carried forward in this reissuance.

Total Phosphorus (TP): A limitation of 2.0 mg/L was initially assigned per the Nutrient Enriched Waters (NEW) Policy (9VAC25-40-30) to all permits authorized to discharge 1.0 MGD or more to "nutrient enriched waters." The NEW designation on the receiving stream has since been repealed. TP loadings for Outfalls 004 and 005 are now addressed through the Nutrient General Permit (VAN040086). The concentration limitation of 2.0 mg/L is retained because Outfalls 004 and 005 are significant dischargers of TP. See **Attachment 5.e.**

**Outfall 104:**
TSS, O&G, Total Recoverable Copper, Total Recoverable Iron: All effluent limitations for internal outfall 104 are technology-based limitations from the FEGs (40CFR Part 423.12.(b)(5)).

18. Antibacksliding: Total Phosphorus limitations were removed from Outfalls 001-003. The justification of the removal of these limitations is developed in **Attachment 5.e**. The Total Phosphorus limitations were technology-based. Antibacksliding does not

apply to technology-based limitations, unless the proposed relaxation is less stringent than existed FEGs or would not maintain water quality, neither of which is the case for total phosphorus at Outfalls 001-003. Outfalls 006-011 are being removed in this reissuance because there is no longer a discharge of pollutants to state waters. According to the Antibacksliding Regulation, limitations can be made less stringent (or removed) if material and substantial alterations or additions have been made to the facility that would justify less stringent limits. In this case the source of pollutants has been removed, and the effluent now represents river water with no additives. Consequently, antibacksliding does not prohibit the removal of Outfalls 006-011. See **Attachment 6**.

19. Compliance Schedule: Not applicable.

20. Special Conditions – Part I.B

a. I.B.1. **Notification Levels**
**Rationale**: Required by VPDES Permit Regulation, 9VAC25-31-200 A for all manufacturing, commercial, mining, and silvicultural dischargers.

b. I.B.2. **Nutrient Reopener**
**Rationale:**
9 VAC 25-40-70 A authorizes DEQ to include technology-based annual concentration limits in the permits of facilities that have installed nutrient control equipment, whether by new construction, expansion or upgrade. 9 VAC 25-31-390 A authorizes DEQ to modify VPDES permits to promulgate amended water quality standards.

c. I.B.3. **Materials Handling/Storage**
**Rationale:** 9VAC25-31-50 A prohibits the discharge of any wastes into State waters unless authorized by permit. Code of Virginia §62.1-44.16 and §62.1-44.17 authorize the Board to regulate the discharge of industrial waste or other waste.

d. I.B.4. **Discharge of Chlorine in Cooling Water**
**Rationale:** This special condition prohibits the discharge of chlorine from any one power generating unit for more than 2 hours in any one day unless the utility can demonstrate that it is required for macroinvertebrate control. This 2-hour prohibition is contained in Federal Effluent Guidelines (FEG) as BAT (40CFR423.13(b)(2)) for Outfalls 002 and 003, and NSPS (40CFR423.15(h)(2)- for Outfall 001. This prohibition is different from the 2004 permit. The 2004 permit reflected the FEG for cooling water from a plant with electric generating capacity less than 25 megawatts (MW). The condition is revised to appropriately reflect the FEG requirement for plants with electric generating capacity greater than 25 MW.

e. I.B.5. **O&M Manual Requirement**
**Rationale:** Required by Code of Virginia § 62.1-44.16; VPDES Permit Regulation, 9VAC25-31-190 E, and 40 CFR 122.41(e). These require proper operation and maintenance of the permitted facility. Compliance with an approved O&M manual ensures this.

f. I.B.6. **Discharge of Tank Bottom Waters**
**Rationale:** This special condition prohibits the discharge of tank bottom waters from bulk fuel oil or waste oil storage facilities. This prohibition is consistent with the regulation of bulk petroleum handling facilities and is applicable to this facility because large quantities of fuel oil are stored. This

special condition does not prohibit the discharge of tank bottom waters from highly refined lubricating oil tanks. Such discharges would be to the Old Ash Pond (Outfall 004) and should not pose any problem.

g. I.B.7. **Ground Water Monitoring**
**Rationale:** State Water Control Law § 62.1-44.21 authorizes the Board to request information needed to determine impact on State waters. Ground water monitoring for parameters of concern will indicate whether pond seepage is resulting in violations to the State Water Control Board's Ground Water Standards.

This special condition references a ground water monitoring program that was approved in 2001 and a Corrective Action Plan addressing potential impacts from the Old Ash Pond submitted in 2007 and revised in 2012. Reference to monitoring around the oil storage facilities was deleted in 2004 because those facilities are now adequately monitored in accordance with the State's Facility and Aboveground Storage Tank (AST) Regulation under file number 4012652.

See **Attachment 8** for a complete discussion of ground water monitoring at the site.

h. I.B.8. **Closure Plan for New Ash Pond**
**Rationale:** This special condition references the updated closure plan for the New Ash Pond approved in 2003.

i. I.B.9. **Discharge of Polychlorinated Biphenyl Compounds**
**Rationale:** This special condition implements a prohibition against the discharge of polychlorinated biphenyl compounds contained in the Federal Steam Electric Power Generating Guidelines (BPT).

j. I.B.10. **Discharge of Debris from Trash Racks**
**Rationale:** This special condition prohibits the return of debris collected on the intake trash racks to the waterway.

k. I.B.11. **Discharges of Uncontaminated River Water**
**Rationale**: This condition identifies sources of uncontaminated river water that the permittee is authorized to discharge directly to the river and not through a permitted outfall. The sources identified in this special condition should be uncontaminated river water which do not have any impact on the receiving stream. The intake screen backwash flows (designated as Outfalls 006-011 in the 2004 permit) were removed from this condition in the 2004 permit as the discharges were incorporated in the Part I.A page to address chlorine use in the system. After relocation of the chlorine injection points, all intake screen backwash discharges now consist of James River water only. Outfalls 006-011 are being removed in this permit reissuance in accordance with the justification in Attachment 6, and the screen backwashes returned to this condition.

l. I.B.12. **Discharge of Fly Ash Transport Water from Units 7 and 8.**
**Rationale:** This special condition implements a New Source Performance Standard from the Steam Electric Power Guidelines prohibiting the discharge of fly ash transport water from Units 7 and 8. This NSPS applied to these units when constructed. (Units 7 and 8 are fueled primarily by natural gas, but can also use distillate fuel oil.)

m. I.B.13. **Licensed Operator Requirement**
**Rationale:** Licensed operators are required by VPDES Permit Regulation 9 VAC 25-31-200 C and the Code of Virginia § 54.1-2300 et seq., Rules and Regulations for Waterworks and Wastewater Works Operators and Onsite Sewage System Professionals (18 VAC 160-20-10 et seq.).

n. I.B.14. **Compliance Reporting**
**Rationale:** Authorized by VPDES Permit Regulation, 9VAC25-31-190 J 4 and 220 I. This condition is necessary when pollutants are monitored by the permittee and a maximum level of quantification and/or a specific analytical method is required in order to assess compliance with a permit limit or to compare effluent quality with a numeric criterion. The condition also establishes protocols for calculation of reported values.

The QLs for TSS, Ammonia, TRC, and O&G come from GM10-2003, IN-3. The QL for TPH is based on the O&G QL noted above. The QLs for Total Recoverable Copper and Total Recoverable Iron are calculated as 40% of the Federal Effluent Guideline limitations.

o. I.B.15. **TMDL Reopener**
**Rationale**: Section 303(d) of the Clean Water Act requires that Total Maximum Daily Loads (TMDLs) be developed for streams listed as impaired. This special condition is to allow the permit to be reopened if necessary to bring it into compliance with any applicable TMDL approved for the receiving stream. The re-opener recognizes that, according to Section 402(o)(1) of the Clean Water Act, limits and/or conditions may be either more or less stringent than those contained in this permit. Specifically, they can be relaxed if they are the result of a TMDL, basin plan, or other wasteload allocation prepared under section 303 of the Act.

p. I.B.16. **Treatment Works Closure Plan**
**Rationale:** Code of Virginia § 62.1-44.16 of the State Water Control Law supports the requirement to submit and implement a closure plan for a wastewater treatment facility if the treatment facility ceases operations or undergoes new construction or substantial modification.

q. I.B.17. **Whole Effluent Toxicity (WET) Program**
**Rationale:** VPDES Permit Regulation, 9VAC25-31-210 and 220.I, requires monitoring in the permit to provide for and assure compliance with all applicable requirements of the State Water Control Law and the Clean Water Act. This industrial category of facilities is identified in Agency guidance for inclusion in the toxics monitoring program.

Special Condition B.17. requires acute and chronic WET testing on Outfalls 001, 002, 003, and 005. A chronic limitation and quarterly testing on Outfall 004 is required in Part I.A. See **Attachment 9**.

r. I.B.18. **Oil Storage Ground Water Monitoring Reopener**
**Rationale:** Reference to bulk oil storage was removed in the 2004 reissuance from the special condition requiring ground water monitoring because such monitoring is now addressed by the Facility and Aboveground Storage Tank (AST) Regulation, 9 VAC 25-91-10 et seq. Where potential exists for ground water pollution and that regulation does not require monitoring, the VPDES permit may require such monitoring under Code of Virginia § 62.1-44.21.

Special Conditions 19 & 20 from the 2008 modification were removed because compliance with these conditions has already been achieved and they are no longer applicable. Nutrient Loadings are now addressed in the Nutrient Trading GP under which Dominion Chesterfield Power Station has coverage (VAN040086).

s. I.B.19. **316(b) Requirements**
**Rationale:** This special condition was revised in the 2008 modification to reflect changes in the 316(b) requirements. The facility includes a cooling water intake structure governed by §316(b) of the Clean Water Act which requires that the location, design, construction and capacity of the cooling water intake structures reflect the "best technology available for minimizing adverse environmental impact." The Chesterfield Power Station December 1980 environmental report on impingement and entrainment studies conducted at the facility indicated minimal or no adverse environmental impact. The special condition requires continued compliance with §316(b) and submittal of new data that was recently collected in response to EPA's Phase II requirements. Collected data and any changes to the intake structures or conditions will be reevaluated at each reissuance to monitor continued compliance with the requirement. The condition also includes a reopener, should further §316(b) related conditions become necessary once the EPA Phase II rule is finalized or a new BPJ determination is required.

t. I.B.20. **Water Quality Criteria Reopener**
**Rationale:** This special condition was added in 2004, in response to public comment specific to the adoption of temperature standards addressing human health. State Water Control Law §62.1-44.21 authorizes the Board to request information needed to determine the discharge's impact on State waters. To ensure that water quality standards are maintained, the permittee is required to analyze the facility's effluent for the substances noted.

u. I.B.21 **CER**
**Rationale:** § 62.1-44.16 of the Code of Virginia requires industrial facilities to obtain DEQ approval for proposed discharges of industrial wastewater. A Concept Engineering Report (CER) means a document setting forth preliminary concepts or basic information for the design of industrial wastewater treatment facilities and the supporting calculations for sizing the treatment operations. 9 VAC 25-40-70.A authorizes DEQ to include technology-based annual concentration limits in the permits of facilities that have installed nutrient control equipment, whether by new construction, expansion or upgrade.

21. Part II, Conditions Applicable to All VPDES Permits
Rationale: The VPDES Permit Regulation at 9 VAC 25-31-190 requires all VPDES permits to contain or specifically cite the conditions listed.

22. Storm water discharges at the Station not directed to Outfall 004 or 005 are addressed by industrial storm water general permit VAR051023.

23. NPDES Permit Rating Work Sheet: Total Score – 600. See **Attachment 10**.

24. Changes to the 2008 Permit Modification:

| **Permit Cover Page Changes:** | |
|---|---|
| **Item** | **Rationale** |
| Introductory paragraph | Updated language to reflect January 27, 2010 VPDES Permit Manual (Guidance Memorandum 10-2003). |
| Facility Name | Revised from "Chesterfield Power Station" to "*Dominion* Chesterfield Power Station" to reflect the Facility Name reported on Form 1 of the reissuance application. |
| City | Deleted because it's not applicable. |
| Signatory | Revised from Water Permit Manager to Deputy Regional Director as the permit is a major. This change is consistent with DEQ Policy Statement 2-09. |

| **Effluent Monitoring Changes – Outfall 001:** | | | | | |
|---|---|---|---|---|---|
| **Parameter Changed** | **Discharge Limitations Changed** | | **Monitoring Requirements Changed** | | **Rationale** |
| | **From** | **To** | **From** | **To** | |
| Total Phosphorus (Monthly Average/ Maximum) | 2.0 mg/L /NL | None | 1/Month | None | Removed per discussion in Attachment 5.e. |

| **Part I.A Changes – Outfall 001:** | | |
|---|---|---|
| **From** | **To** | **Rationale** |
| I.A.1 | I.A.1 | No change to introductory narrative. |
| I.A.1.a | I.A.1.a | Updated language to remove "by the permittee" to reflect DEQ-PRO QA/QC feedback dated 2/28/2012. Added DMR parameter codes to each pollutant for increased clarity in reporting. |
| I.A.1.a.(1) | I.A.1.a.(1) | No change. |
| I.A.1.a.(2) | I.A.1.a.(2) | No change. |
| I.A.1.a.(3) | I.A.1.a.(3) | No change. |
| I.A.1.a.(4) | I.A.1.a.(4) | No change. |
| I.A.1.b | I.A.1.b | No change. |
| ----- | I.A.1.c | Language added in accordance DEQ-PRO QA/QC feedback dated 4/24/2012. |

| **Effluent Monitoring Changes – Outfall 002:** | | | | | |
|---|---|---|---|---|---|
| **Parameter Changed** | **Discharge Limitations Changed** | | **Monitoring Requirements Changed** | | **Rationale** |
| | **From** | **To** | **From** | **To** | |
| Total Phosphorus (Monthly Average/ Maximum) | 2.0 mg/L /NL | None | 1/Month | None | Removed per discussion in Attachment 5.e. |

| **Part I.A Changes – Outfall 002:** | | |
|---|---|---|
| **From** | **To** | **Rationale** |
| I.A.2 | I.A.2 | No change to introductory narrative. |

| | | |
|---|---|---|
| I.A.2.a | I.A.2.a | Updated language to remove "by the permittee" to reflect DEQ-PRO QA/QC feedback dated 2/28/2012. Added DMR parameter codes to each pollutant for increased clarity in reporting. |
| I.A.2.a.(1) | I.A.2.a.(1) | No change. |
| I.A.2.a.(2) | I.A.2.a.(2) | No change. |
| I.A.2.a.(3) | I.A.2.a.(3) | No change. |
| I.A.2.a.(4) | I.A.2.a.(4) | No change. |
| I.A.2.b | I.A.2.b | No change. |
| ----- | I.A.2.c | Language added in accordance DEQ-PRO QA/QC feedback dated 4/24/2012. |

**Effluent Monitoring Changes – Outfall 003:**

| Parameter Changed | Discharge Limitations Changed | | Monitoring Requirements Changed | | Rationale |
|---|---|---|---|---|---|
| | From | To | From | To | |
| Total Phosphorus (Monthly Average/ Maximum) | 2.0 mg/L /NL | None | 1/Month | None | Removed per discussion in Attachment 5.e. |

**Part I.A Changes – Outfall 003:**

| | | |
|---|---|---|
| I.A.3 | I.A.3 | No change to introductory narrative. |
| I.A.3.a | I.A.3.a | Updated language to remove "by the permittee" to reflect DEQ-PRO QA/QC feedback dated 2/28/2012. Added DMR parameter codes to each pollutant for increased clarity in reporting. |
| I.A.3.a.(1) | I.A.3.a.(1) | No change. |
| I.A.3.a.(2) | I.A.3.a.(2) | No change. |
| I.A.3.a.(3) | I.A.3.a.(3) | No change. |
| I.A.3.a.(4) | I.A.3.a.(4) | No change. |
| I.A.3.b | I.A.3.b | No change. |
| ----- | I.A.3.c | Language added in accordance DEQ-PRO QA/QC feedback dated 4/24/2012. |

**Effluent Monitoring Changes – Outfall 004:**

| Parameter Changed | Discharge Limitations Changed | | Monitoring Requirements Changed | | Rationale |
|---|---|---|---|---|---|
| | From | To | From | To | |
| TSS (Daily Max) | 100 mg/L | 50 mg/L | 2/Month | 2/Month | Per 40 CFR Part 423.12(b)(9) for coal pile runoff. |
| Ammonia-N | 13 mg/L 19mg/L | 8.73 mg/L 12.8 mg/L | 1/Week | 1/Week | Per the WQ-based effluent limitation analysis presented in Attachment 5.c. |
| TPH | NL (Monthly Average) | NL (Daily Max) | 1/Year | 1/Year | To be consistent with the Petroleum Contamination General Permit. |

**Part I.A Changes – Outfall 004:**

| | | |
|---|---|---|
| I.A.4 | I.A.4 | No change to introductory narrative. |

| | | |
|---|---|---|
| I.A.4.a | I.A.4.a | Updated language to remove "by the permittee" to reflect DEQ-PRO QA/QC feedback dated 2/28/2012. Added DMR parameter codes to each pollutant for increased clarity in reporting. Added definitions for 1/Quarter and 1/Year monitoring frequencies for clarity. |
| I.A.4.a.(1) | I.A.4.a.(1) | No change. |
| I.A.4.a.(2) | I.A.4.a.(2) | No change. |
| I.A.4.b | I.A.4.b | No change. |
| I.A.4.c | I.A.4.c | No change. |
| ----- | I.A.4.d | Language added in accordance DEQ-PRO QA/QC feedback dated 4/24/2012. |

**Effluent Monitoring Changes – Outfall 104:**

| Parameter Changed | Discharge Limitations Changed | | Monitoring Requirements Changed | | Rationale |
|---|---|---|---|---|---|
| | From | To | From | To | |
| All Parameters | No change | | 1/discharge | 1/day | 1/discharge is not a compatible frequency with the compliance database. |

**Part I.A. Changes – Outfall 104:**

| | | |
|---|---|---|
| I.A.5 | I.A.5 | No change to introductory narrative. |
| I.A.5.a | I.A.5.a | Updated language to remove "by the permittee" to reflect DEQ-PRO QA/QC feedback dated 2/28/2012. Added DMR parameter codes to each pollutant for increased clarity in reporting. "Recoverable" was added to the metals parameters (Total Recoverable…) for clarity. |
| I.A.5.a.(1) | I.A.5.a.(1) | No change. |
| I.A.5.b | I.A.5.b | No change. |
| ----- | I.A.5.c | Language added in accordance DEQ-PRO QA/QC feedback dated 4/24/2012. |

**Effluent Monitoring Changes – Outfall 005:**

| Parameter Changed | Discharge Limitations Changed | | Monitoring Requirements Changed | | Rationale |
|---|---|---|---|---|---|
| | From | To | From | To | |
| Ammonia, as N | NL | ---- | 1/Week | ---- | No longer needed to assess the effects of SCR and FGD wastewater on the effluent. See Attachments 5.c & 5.d. |

**Part I.A Changes – Outfall 005:**

| From | To | Rationale |
|---|---|---|
| I.A.6 | I.A.6 | No change to introductory narrative. |
| I.A.6.a | I.A.6.a | Updated language to remove "by the permittee" to reflect DEQ-PRO QA/QC feedback dated 2/28/2012. Added DMR parameter codes to each pollutant for increased clarity in reporting. |
| I.A.6.a.(1) | I.A.6.a.(1) | No change. |
| I.A.6.b | I.A.6.b | No change. |
| I.A.6.c | I.A.6.c | No change. |

| | | |
|---|---|---|
| ----- | I.A.6.d | Language added in accordance DEQ-PRO QA/QC feedback dated 4/24/2012. |
| **Part I.A Changes – Outfall 006 though 011:** | | |
| **From** | **To** | **Rationale** |
| I.A.7 | ---- | Removed outfalls per discussion in Attachment 6. |
| **Part I.B Changes:** | | |
| **From** | **To** | **Rationale** |
| I.B.1 | I.B.1 | **Notification Levels**: "the discharge" revised to "any discharge," in part b, in accordance with GM10-2003, IN-3. |
| I.B.2 | I.B.2 | **Nutrient Reopener**: No change. |
| I.B.3 | I.B.3 | **Materials Handling/Storage**: Updated language to reflect GM 10-2003, IN-3. |
| I.B.4 | I.B.4 | **Discharge of Chlorine in Cooling Water**: Revised to reflect the appropriate section of the Federal Effluent Guidelines (40CFR423.13(b)(2)). |
| I.B.5 | I.B.5 | **O&M Manual Requirement**: Updated language to reflect current agency guidance (OWP&CA email dated 4/3/2012). |
| I.B.6 | I.B.6 | **Discharge of Tank Bottom Waters**: No change. |
| I.B.7 | I.B.7 | **Ground Water Monitoring**: Updated to reflect the progress with the Old Ash Pond CAP and the requirement for a metals pond CAP. |
| I.B.8 | I.B.8 | **Closure Plan for New Ash Pond**: No change. |
| I.B.9 | I.B.9 | **Discharge of PCBs**: No Change. |
| I.B.10 | I.B.10 | **Discharge of Debris from Trash Racks**: No change. |
| I.B.11 | I.B.11 | **Discharges of Uncontaminated River Water:** Added subpart d. to address the deletion of Outfalls 006-011. See Attachment 6. |
| I.B.12 | I.B.12 | **Discharge of Fly Ash Transport Water from Units 7 & 8**: No change. |
| I.B.13 | I.B.13 | **Licensed Operator Requirement**: Updated language to reflect licensing board's new title. |
| I.B.14 | I.B.14 | **Compliance Reporting**: Updated language to reflect GM 10-2003, IN-3. Language further revised to clarify monthly average and daily maximum reporting for monitoring periods encompassing multiple months. Removed QL for TOC and TP. The Agency does not have an established TOC QL and TP QLs are adequately addressed in the Nutrient General Permit (VAN40086). Updated QLs for total recoverable copper and total recoverable iron to be consistent with current regional policy. See Part 20 for additional discussion. |
| I.B.15 | I.B.15 | **TMDL Reopener**: No change. |
| I.B.16 | I.B.16 | **Treatment Works Closure Plan**: Updated language to reflect GM 10-2003. Language further revised in accordance with Staff Decisions (8/7/12). |

| | | |
|---|---|---|
| I.B.17 | I.B.17 | **WET Testing Program:** Revised in accordance with Attachment 9. Revised acute and chronic endpoints for Outfalls 001 and 002 and the acute endpoint for Outfall 005. |
| I.B.18 | I.B.18 | **Oil Storage Ground Water Monitoring Reopener:** No change. |
| I.B.19 | ---- | **Basis of Design Report:** Condition removed as the condition has already been satisfied. |
| I.B.20 | ---- | **Interim Optimization Plan:** Condition removed as the condition has already been satisfied. |
| I.B.21 | I.B.19 | **§316(b) Requirements:** Revised to reflect the receipt of biological data on December 29, 2008, and thus the removal of the requirement to submit the data. |
| I.B.22 | I.B.20 | **Water Quality Criteria Reopener:** No change. |
| I.B.23 | I.B.21 | **CER:** Special condition added in accordance with DEQ-PRO staff decision dated 6/29/2010 and GM07-2008 Amendment 2. |
| Part I.C | ---- | **Schedule of Compliance:** Removed because a compliance schedule is not needed for this reissuance. |
| **Part II Changes:** | | |
| **From** | **To** | **Rationale** |
| ----- | II.A.4 | New condition added to reflect change in laboratory accreditation requirements. |

25. Variances/Alternate Limits or Conditions: Thermal variance in accordance with Section 316(a) of the Clean Water Act. See Attachment 7.

26. Public Notice Information required by 9 VAC 25-31-280 B:

Comment period: Publishing Newspaper: *Style Weekly*
Publication Dates:
Start Date: End Date:

All pertinent information is on file and may be inspected and copied by contacting Emilee Adamson at:

Virginia Department of Environmental Quality (DEQ)
Piedmont Regional Office
4949-A Cox Road
Glen Allen, Virginia 23060-6296

Telephone Number 804/527-5072
Facsimile Number 804/527-5106
Email Emilee.Adamson@deq.virginia.gov

DEQ accepts comments and requests for public hearing by hand delivery, e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would

be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period, if public response is significant, based on individual requests for public hearing, and there are substantial, disputed issues relevant to the permit. The public may review the draft permit and application at the DEQ Piedmont Regional Office by appointment or may request copies of the documents from the contact person listed above.

Public Notice Comments: TBD

27. Additional Comments:

a. Previous Board Action: A Consent Special Order was issued in October 2003 authorizing operation of Selective Catalytic Reduction (SCR) air control technology. The 2003 Order was terminated when the 2004 permit was reissued. A separate Consent Special Order was issued in 2005 and terminated May 1, 2007. The Order addressed an unauthorized ash discharge through Outfall 004 to Farrar Gut. The Order required ambient stream assessment, remedial action and preventative planning.

b. Staff Comments:

- Because of Warning Letters issued December 22, 2009, February 26, 2010 and March 1, 2011, the facility is not eligible for reduced monitoring with this reissuance. Furthermore, the monitoring frequencies in the 2004 permit are considered necessary for accurate characterization of the discharges.
- This facility discharges to a receiving stream section with the special standards “a,” “z,” “EWS-11” and “bb.” The facility does not discharge to shellfish waters, therefore, special condition “a" does not apply. Because the location of outfall 001 is not within the designated boundaries, special standards “z” and “EWS-11” do not apply. Special standard “bb” involves chlorophyll a. Chlorophyll a is adequately addressed through the Nutrient Trading TMDL discussed below (See Part 28).
- Chesterfield Power Station is a significant discharger of nutrients to the Chesapeake Bay. The facility was assigned a WLA in the 2005 rulemaking that is now reflected in the Bay TMDL. A nutrient general permit (VAN040086) was issued January 1, 2012 to this facility to address the nutrient discharges. The permit expires December 31, 2016.
- This facility is subject to the requirements of 9VAC25-151, General VPDES Permit for Discharges of Storm Water Associated with Industrial Activity. The facility currently holds a General VPDES Permit (VAR051023) which expires on June 30, 2014.
- 2012 annual fees were deposited October 1, 2012.
- The permittee is not currently a participant in the Virginia Environmental Excellence.
- This permit action is not controversial and the permittee is currently meeting all required effluent limitations.
- The facility has been registered in eDMR since October 2, 2012.
- The permit expiration date is set as the last day of the month just shy of a five year permit duration. This change is in accordance with a regional initiative (Staff Decisions: 10-25-11) to adjust permit cycles to include complete calendar months. The initiative will facilitate smoother monitoring transitions between cycles.
- The proposed limitations will maintain Water Quality Standards.

- The 2004 permit was administratively continued upon the permit expiration. The permit is being reissued subsequent to expiration due to administrative delays.

EPA Comments:
- TBD

VDH-ODW Comments:
- The application was sent to VDH-ODW on July 31, 2009. A response received August 10, 2009 indicated that there are no public water supply intakes within 15 miles of the discharge/activity. The raw water intake for the Virginia American-Hopewell water treatment plant is located on the Appomattox River, approximately 20 miles downstream of the discharge point for the Dominion Chesterfield Power Station. VDH waived the right to review and comment on the draft permit.

Owner Comments:
- TBD

Planning Conformance Statement:
- On TBD the Water Resources Development Staff indicated that the discharge is in conformance with the existing planning documents for the area.

Public Notice Notifications:
- The Chesterfield County Administrator, Chairman of the Chesterfield County Board of Supervisors, and Executive Director of the Richmond Regional Planning District Commission were notified of the public comment period on TBD in accordance with the Code of Virginia, §62.1-44.15:01.

28. 303(d) Listed Segments (TMDL):
During the 2010 305(b)/303(d) Water Quality Integrated Report, the receiving streams were assessed as Category 5A waters ("A Water Quality Standard is not attained. The water is impaired or threatened for one or more designated uses by a pollutant(s) and requires a TMDL (303d list)."). In the James River, the Recreation Use is impaired due to *E. coli* violations. There was insufficient information to assess the Recreation Use in Farrar Gut; however, *E. coli* was considered a non-impairing observed effect. The James River and Tributaries City of Richmond Bacterial TMDL was approved by the EPA on November 4, 2010. The power station was included in the TMDL; however, the facility was not assigned a bacteria wasteload allocation because it is not a source of the pollutant.

The Fish Consumption Use in the James River is impaired due to a VDH Fish Consumption Advisory for PCBs. All outfalls were analyzed for PCBs and no observed concentrations were reported. CPS has not performed the voluntary low level PCB monitoring (method 1668) for the pending TMDL development, but is anticipated to perform the sampling within the upcoming permit cycle. As the data currently indicated that PCBs are not present in the discharge and Part I.B.9 of the permit prohibits the discharge of PCBs, this permit should neither cause nor contribute to the impairment.

Aquatic Life Use was impaired due to violation of the chlorophyll a standard as well as inadequate submerged aquatic vegetation (SAV) and low dissolved oxygen in the upper James River tidal freshwater estuary. Farrar Gut was also impaired of the Aquatic Life Use due to the SAV and dissolved oxygen impairment in the estuary.

The Chesapeake Bay TMDL was approved by the EPA on 12/29/2010. The TMDL addresses SAV, dissolved oxygen, and chlorophyll a impairments in tidal waters throughout the Chesapeake Bay. This facility discharges directly to Farrar Gut in the James River in the Chesapeake Bay watershed in the James River Upper segment (JMSTF2). The receiving stream has been addressed in the Chesapeake Bay TMDL. The TMDL addresses dissolved oxygen (DO), chlorophyll a, and submerged aquatic vegetation (SAV) impairments in the main stem Chesapeake Bay and its tidal tributaries by establishing non-point source load allocations (LAs) and point-source waste load allocations (WLAs) for Total Nitrogen (TN), Total Phosphorus (TP) and Total Suspended Solids (TSS) to meet applicable Virginia Water Quality Standards contained in 9VAC25-260-185. This facility is considered a Significant Chesapeake Bay wastewater discharge. All Significant Chesapeake Bay wastewater discharges in the James River Upper segment (JMSTF2) have been assigned aggregate WLAs of 5,014,234 pounds per year TN, 496,712 pounds per year TP, and 67,321,434 pounds per year TSS. Implementation of the Chesapeake Bay TDML is currently accomplished in accordance with the Commonwealth of Virginia's Phase I Watershed Implementation Plan (WIP), approved by EPA on December 29, 2010. The approved WIP recognizes that the TMDL nutrient WLAs for Significant Chesapeake Bay wastewater dischargers are set in two regulations: 1) the Water Quality Management Planning Regulation (9VAC25-720); and 2) the "General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed of Virginia" (9VAC25-820). The WIP further outlines that since TSS discharges from wastewater facilities represent an insignificant portion of the Bay's total sediment load, they may be considered in the aggregate. The WIP also states that wastewater discharges with technology-based TSS limits are considered consistent with the TMDL. 40 CFR 122.44(d)(1)(vii)(B) requires permits to be written with effluent limits necessary to meet water quality standards and to be consistent with the assumptions and requirements of applicable WLAs. Outfalls 001-003 are not subject to the TMDL because "point source dischargers" as defined in the Nutrient Technology Regulation (9VAC25-40) do not include permitted discharges of noncontact cooling water. Outfalls 004 and 005 are subject to the TMDL. DEQ has provided coverage under the VPDES Nutrient General Permit (GP) for Outfalls 004 and 005 under permit VAN040086. The requirements of the Nutrient GP currently in effect for this facility are consistent with the Chesapeake Bay TMDL. This individual permit includes technology-based TSS monthly average limits of 30 mg/L that are also consistent with the Chesapeake Bay TMDL and WIP. Implementation of the full Chesapeake Bay WIP, including GP reductions combined with actions proposed in other source sectors, is expected to adequately address ambient conditions such that the proposed effluent limits of this individual permit are consistent with the Chesapeake Bay TMDL, and will not cause an impairment or observed violation of the standards for DO, chlorophyll a, or SAV as required by 9VAC25-260-185.

In addition, there were screening level exceedances in the James River for mercury and arsenic in fish tissue and the area is included in the VDH Fish Consumption Advisory for kepone; these are considered non-impairing "observed effects." The Fish Consumption Use in Farrar Gut is considered fully supporting with observed effects due to the kepone advisory. Outfalls 001 through 003 are once through non-contact cooling water; consequently, they are not a source of kepone, mercury or arsenic and should neither cause nor contribute to the observed effects. Observed concentrations of arsenic and mercury at these outfalls represent background ambient stream concentrations. Outfalls 004 and 005 were analyzed for mercury and kepone with less than quantifiable results; and therefore should neither cause nor contribute to the observed effects. Arsenic was observed at quantifiable levels in both the 004 and 005 discharges and is a pollutant reported to be potentially present in coal and coal combustion by-products. A reasonable potential analysis

for arsenic indicates that a limitation is not needed. Furthermore, the observed concentrations of arsenic are orders of magnitude less than the water quality standard. Consequently, the discharges from Outfalls 004 and 005 neither cause nor contribute to the observed arsenic effects.

The Public Water Supply and Wildlife Uses in the James River were fully supporting. The Wildlife Use in Farrar Gut was not assessed.

29. Summary of attachments to this Fact Sheet:

| | |
|---|---|
| Attachment 1 | Location and Site Maps |
| Attachment 2 | Water Flow Diagram and Narrative & List of Chemicals Present and Map of Storage |
| Attachment 3 | Ambient Stream Characterization |
| Attachment 4 | Effluent Characterization |
| Attachment 5 | Effluent Limitation Development |
| Attachment 6 | Removal of Outfalls 006-011 |
| Attachment 7 | Discussion of 316(a) and 316(b) |
| Attachment 8 | Evaluation of Ground Water Monitoring Data |
| Attachment 9 | Discussion of WET Testing |
| Attachment 10 | NPDES Permit Rating Work Sheet |
| Attachment 11 | Site Visit Memo |

**Attachment 1**

Location and Site Maps

**Attachment 2**

Water Flow Diagram and Narrative
& List of Chemicals Present and Map of Storage

**Attachment 3**

Ambient Stream Characterization

**Attachment 4**

Effluent Characterization

**Attachment 5**

Effluent Limitation Development

**Attachment 6**

Removal of Outfalls 006-011

**Attachment 7**

Discussion of 316(a) and 316(b)

**Attachment 8**

Evaluation of Ground Water Monitoring Data

**Attachment 9**

Discussion of WET Testing

**Attachment 10**

NPDES Permit Rating Work Sheet

**Attachment 11**

Site Visit Memo